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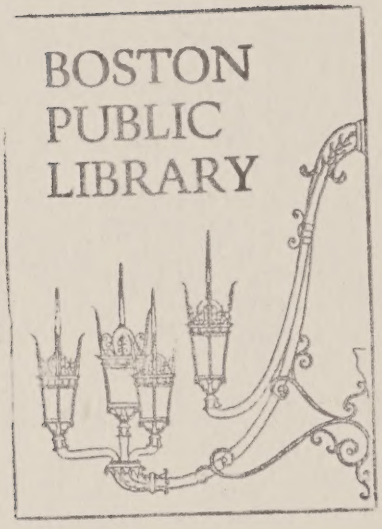
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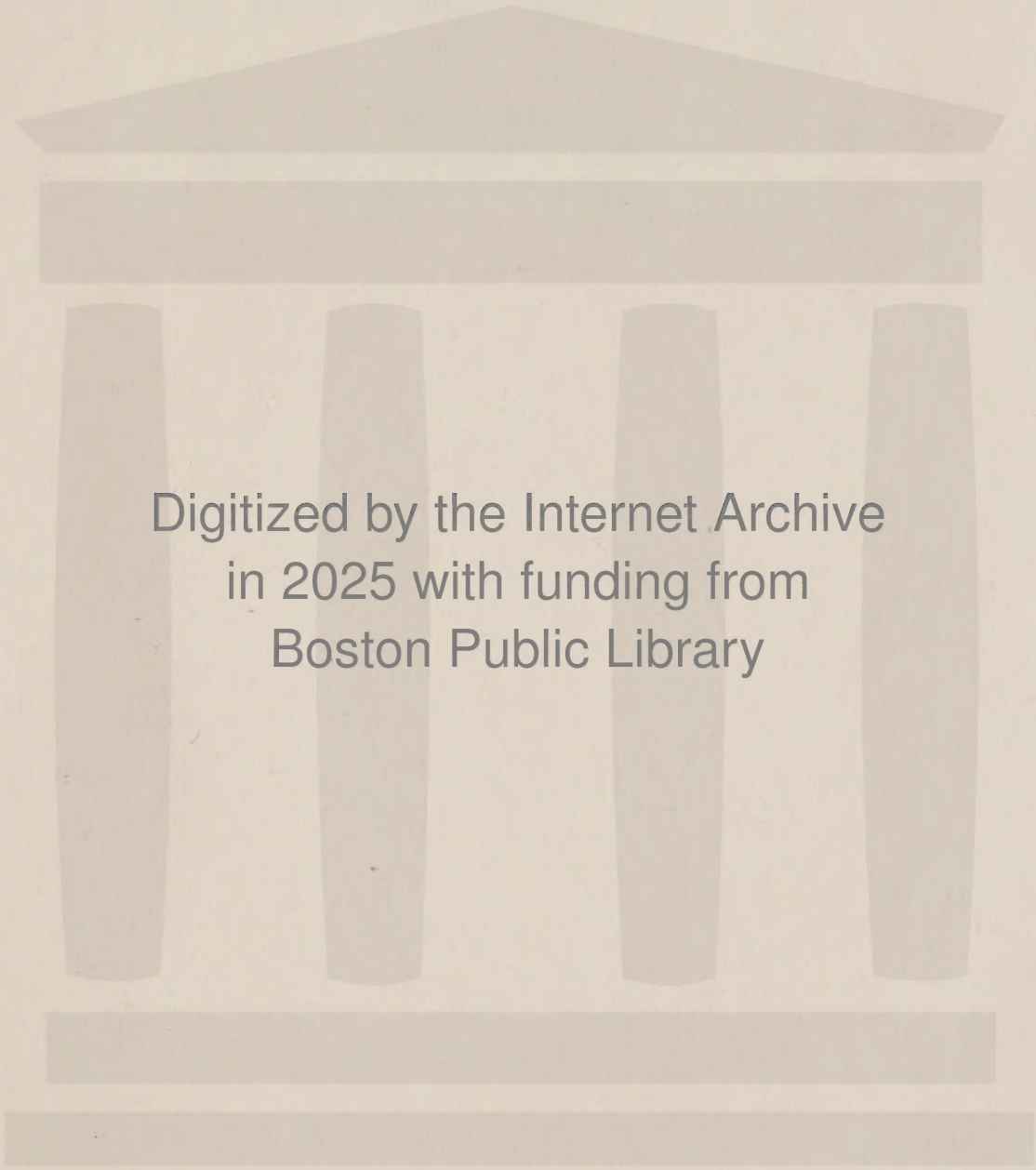

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LOCATION OF MANUFACTURING FIRMS AND JOBS IN BOSTON, 1977

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LOCATION OF MANUFACTURING FIRMS AND JOBS IN BOSTON, 1977

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Research Department
Boston Redevelopment Authority

January 1979

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City of Boston

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Research Department

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GUIDE TO THE REPORT

The study of the distribution of manufacturing firms and jobs among Boston planning districts is based on a new data source developed by the Boston Redevelopment Authority Research Department: the Boston Manufacturing Universe (BMU). The heart of this report is its tables, which contain much detail on the characteristics of manufacturing industries by planning districts. The study also contains information on changes in the number of manufacturing jobs in sections of Boston (not planning districts) between 1965 and 1977, in selected industries. The brief text of the report is primarily an explanation of the tables and mentions some of the more notable findings.

LOCATION OF MANUFACTURING FIRMS AND JOBS IN BOSTON, 1977

Introduction

As part of the BRA Research Department's work on the analysis of the City's economic base, a study of the spatial distribution of economic activity in Boston is being undertaken.[1] The first product of the location study is the present report on the spatial distribution of manufacturing firms and jobs in Boston. While information is available on manufacturing employment for the City as a whole, as well as for the Boston Metropolitan Area, it generally has not been available for sections of Boston.[2]

The Boston Manufacturing Universe (BMU) data file was developed in the BRA Research Department as a basis for obtaining a more detailed picture of such factors as job distribution and industry concentrations. BMU is a list of manufacturing firms and contains information on each firm's employment, zip code, and industrial class (using the Standard Industrial Classification (SIC) System). The findings of this report are

1. A study of the distribution of all private, public, and self-employment in Boston by neighborhood planning district is presently underway.

2. Sources on manufacturing employment in Boston and Boston SMSA include: for Boston: Census of Manufacturers, Mass. Department of Labor and Industries, Executive Office of Manpower Affairs, and "Employment and Wages by 2-Digit SIC Codes for the City of Boston," BRA Research Department, July 1977; for Boston SMSA: "Employment Review, A Monthly Report of Non-farm Payroll Employment Hours and Earnings of Production Workers," Mass. Division of Employment Security.

based on the BMU for the year 1977; the methods used in its preparation are described in Appendix A. BRA planning districts are the geographical unit of analysis. Zip codes were assigned to planning districts according to the planning district boundaries with which they most nearly correspond. Only firms with primary SIC classifications of 20 to 39 - the codes for manufacturing industries - were included.

Findings

Distribution of Manufacturing Firms and Jobs by Planning District

Manufacturing jobs and firms are concentrated in two of Boston's sixteen planning districts, the Central Area and South Boston, which are the historic centers of industrial and commercial activity in the City. Nevertheless, except for Mattapan, Roslindale, and West Roxbury, all areas have at least two percent of the City's firms and jobs in manufacturing SIC classes.

The Central Area has the greatest percentage of manufacturing firms, or 26 percent of Boston's 1,159 firms. South Boston, with 21 percent of the firms, ranks second. The district with the third highest number of manufacturing firms is Back Bay/Beacon Hill, which has 10 percent. No other area has more than 6 percent of the City's manufacturing firms.

In contrast to the distribution of firms, Boston's 53,000 manufacturing jobs are somewhat less concentrated in any planning district other than the South Boston and Central districts. South Boston has the same percentage of the City's manufacturing jobs, or 21 percent, as it has of the City's manufacturing firms. Both the Central Area and Back Bay/Beacon Hill have a greater percentage of firms than jobs, which indicates that smaller enterprises are located there. The Central Area contains 18% of

Boston's manufacturing jobs and 26% of the firms, and Back Bay/Beacon Hill contains 7% of the jobs and 10% of the firms. Yet several districts contain a greater percentage of jobs than firms. These include Charlestown and Dorchester (Uphams Corner), each of which contains 2% of Boston's manufacturing firms but 7% and 9% respectively of all manufacturing jobs. The relative percentages of manufacturing jobs and firms contained in each planning district are shown graphically on Maps I and II, and are based on tabulations presented in Table 1.

- Distribution of Firms and Jobs by Industry

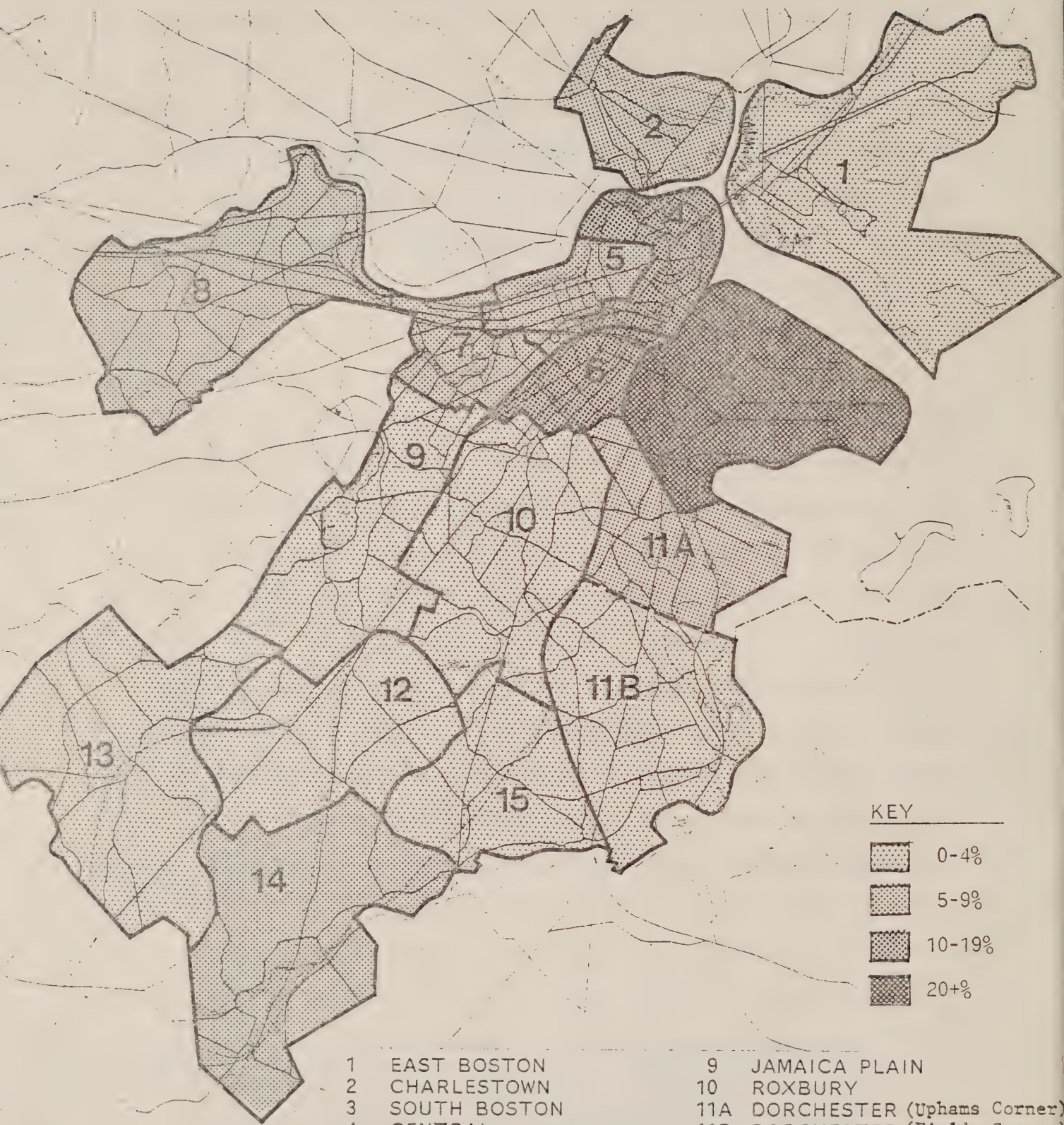
Detailed information on the number of firms and jobs in each of the nineteen manufacturing industries for each planning district as well as for Boston as a whole is presented in Tables 2 to 18. The districts vary not only in the relative proportions of all manufacturing jobs and firms they contain, but also in their industrial composition.

These tables give a profile of the kinds of manufacturing activities and, consequently, of the kinds of jobs found in districts.[1] Examples of notable concentrations of jobs in Boston's larger industries by planning district include: over a third of the food products jobs are located in Charlestown; over half of the apparel products jobs are in the Central Area; and close to a quarter and one-fifth of the printing and publishing

1. It should not be inferred, however, that jobs in firms with manufacturing classifications are necessarily blue-collar jobs. For instance, the headquarters of Gillette is located in the Back Bay and accounts for a large proportion of the manufacturing employment in this district, though probably none of the jobs are production jobs.

Map I

Proportion of Manufacturing Jobs in Boston Planning Districts

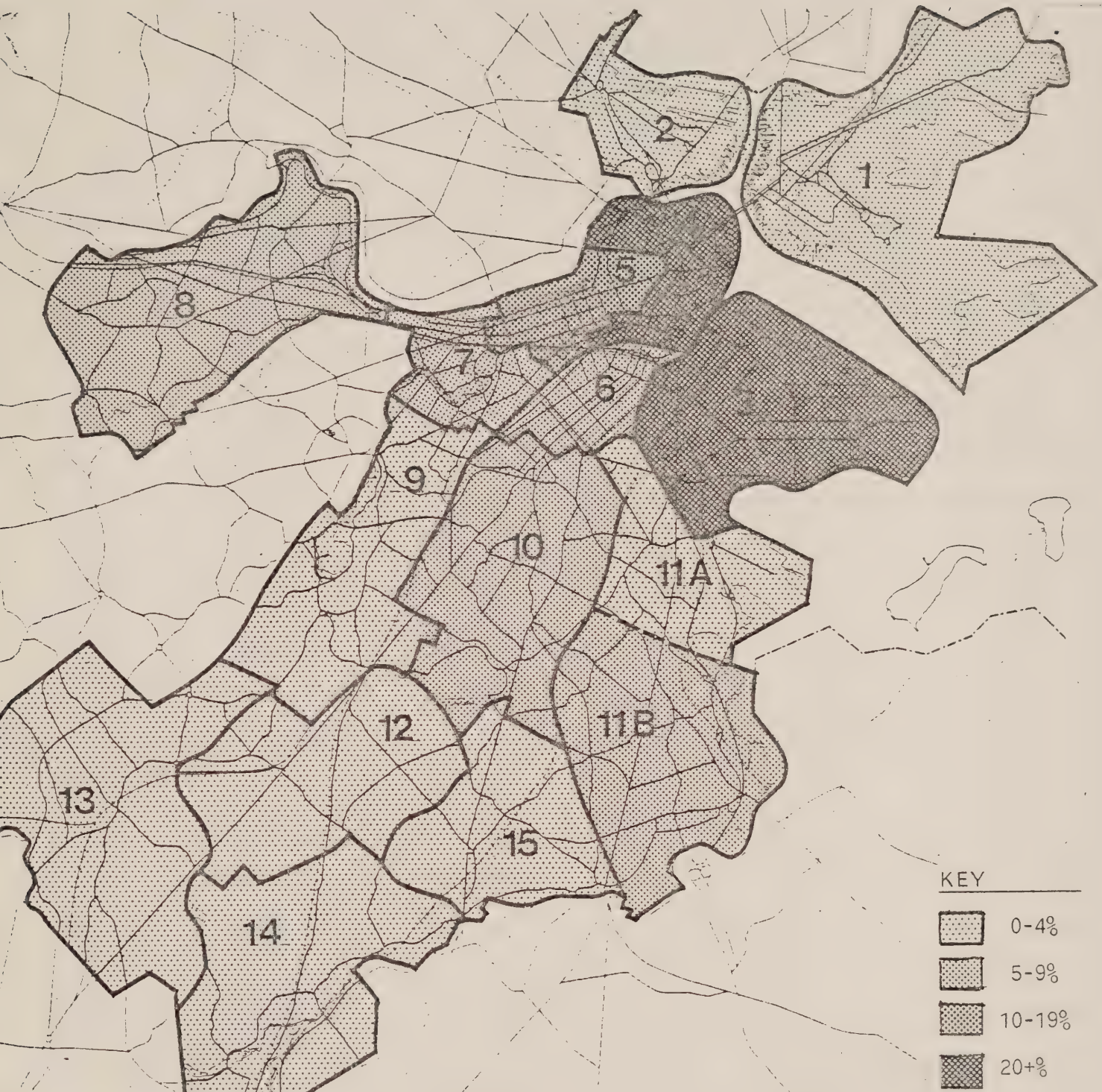


1	EAST BOSTON	9	JAMAICA PLAIN
2	CHARLESTOWN	10	ROXBURY
3	SOUTH BOSTON	11A	DORCHESTER (Uphams Corner)
4	CENTRAL	11B	DORCHESTER (Fields Corner)
5	BACK BAY/BEACON HILL	12	ROSLINDALE
6	SOUTH END	13	WEST ROXBURY
7	FENWAY/KENMORE	14	HYDE PARK
8	ALLSTON/BRIGHTON	15	MATTAPAN/FRANKLIN FIELD

PLANNING DISTRICTS, 1970
Boston, MA

Map II

Proportion of Manufacturing Firms in Boston Planning Districts



1	EAST BOSTON	9	JAMAICA PLAIN
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8	ALLSTON/BRIGHTON	15	MATTAPAN/FRANKLIN FIELD

PLANNING DISTRICTS, 1970
Boston, MA

Table 1

Distribution of Manufacturing Firms and Jobs among Boston Neighborhoods, 1977

	# of Firms in Area	% of All Boston Firms in Area	# of Jobs in Area	% of All Boston Jobs in Area
Allston/Brighton	72	6%	2,723	5%
Back Bay/Beacon Hill	117	10%	3,932	7%
Central	301	26%	9,484	18%
Charlestown	24	2%	3,475	7%
Dorchester (Fields Corner)	59	5%	1,579	3%
Dorchester (Uphams Corner)	27	2%	4,756	9%
East Boston	37	3%	2,101	4%
Fenway/Kenmore	55	5%	2,625	5%
Hyde Park	39	3%	2,546	5%
Jamaica Plain	37	3%	965	2%
Mattapan/Franklin Field	4	*	167	*
Roslindale	10	1%	336	1%
Roxbury	55	5%	1,584	3%
South Boston	243	21%	11,144	21%
South End	64	6%	5,044	10%
West Roxbury	15	1%	564	1%
TOTAL	1,159	99%**	53,027	101%**

* Less than one percent
** Percentages may not add to 100 due to rounding

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Tables 2 to 18 can be found on

Pages 20 - 36, following the

conclusion of this section.

jobs respectively are found in Dorchester (Uphams Corner) and in South Boston. Seventy percent of the jobs in Boston's fourth largest manufacturing industry -- fabricated metals -- are found in South Boston.

Size of Firms in Boston

The vast majority of manufacturing firms in Boston (81 percent) are small, employing less than 50 people. As presented in Table 19, only 3% of Boston's manufacturing firms have 250 or more employees, 5% have 100 to 249 employees, and 11% have 50 to 99 employees.

The large firms, with 250 or more employees, nevertheless contribute the greatest proportion of Boston's manufacturing employment, or 43 percent of all jobs. Jobs in firms with less than 50 employees comprise only 25 percent of the total, indicating that these firms tend to be quite small. Sixteen percent of all jobs are in firms which employ 50 to 99 workers and sixteen percent of all jobs are in firms which employ 100 to 249 workers.

The larger firms generally are located in Boston's main industrial areas -- the Central Area and South Boston. The more residential areas of the City -- South Dorchester, Mattapan, Roslindale, and West Roxbury -- have few firms with over 50 employees. The distribution of firms by planning district according to firm size is presented in Table 20.

Though most firms in the City are small, certain industries tend to have a greater proportion of large firms (250 or more employees) than others. For example, firms in the food, chemicals, electrical machinery, and transportation equipment industries tend to be large-sized (see Table 21).

TABLE 19

Distribution of Boston Manufacturing Firms and Jobs
by Number of Employees, 1977

Number of Workers Per Firm	Firms		Jobs		Average Number of Workers per Firm
	Number of Firms	Percent of Total	Number of Jobs	Percent of Total	
0-49	941	81%	13,111	25%	14
50-99	123	11%	8,48	16%	69
100-249	59	5%	8,712	16%	148
250+	36	3%	22,721	43%	631
Total	1,159	100%	53,030	100%	

Source: Boston Manufacturing Universe/1977, B.R.A. Research Department

Distribution of Manufacturing Firms Among Boston Neighborhoods
by Size of Work Force, 1977

		Workforce Size			
	TOTAL FIRMS	0-49 Jobs	50-99 Jobs	100-249 Jobs	250+ Jobs
Allston/Brighton	72	57	8	5	2
Back Bay/Beacon Hill	117	109	2	2	4
Central	301	252	36	9	4
Charlestown	24	16	2	2	4
Dorchester (Fields Corner)	59	48	10	-	1
Dorchester (Uphams Corner)	27	15	5	4	3
East Boston	37	26	6	2	3
Fenway/Kenmore	55	40	12	1	2
Hyde Park	39	28	4	5	2
Jamaica Plain	37	33	1	3	-
Mattapan/Franklin Field	4	3	-	1	-
Roslindale	10	9	-	1	-
Roxbury	55	46	6	3	-
South Boston	243	199	23	15	6
South End	64	47	8	4	5
West Roxbury	15	13	-	2	-
BOSTON TOTAL	1,159	941	123	59	36
Percent of Total	100%	81%	11%	5%	3%

Source: Boston Manufacturing Universe /1977/ Data File, B.R.A. Research Department

Table 21

Distribution of Boston Manufacturing Firms by Size of Work Force Among Major Industry Groups, 1977

Industry Group (SIC)	Number of Employees Per Firm									
	0 - 49		50 - 99		100 - 249		250+		Total	
	#	%	#	%	#	%	#	%	#	%
Food and kindred products (20)	46	61%	13	17%	10	13%	7	9%	76	100%
Textile mill products (22)	34	92%	3	8%	-		-		37	100%
Apparel and other textile products (23)	152	73%	41	20%	12	6%	2	1%	207	100%
Lumber and wood products (24)	15	94%	-		--		1	6%	16	100%
Furniture and fixtures (25)	40	89%	3	7%	2	4%	-		45	100%
Paper and allied products (26)	28	85%	3	9%	1	3%	1	3%	33	100%
Printing and publishing (27)	248	87%	19	7%	9	3%	8	3%	284	100%
Chemicals and allied products (28)	35	81%	1	2%	3	7%	4	9%	43	99%
Petroleum and coal products (29)	2	100%	-		-		-		2	100%
Rubber and misc. plastic products (30)	18	78%	4	17%	1	4%	-		23	99%
Leather products (31)	33	87%	3	8%	1	3%	1	3%	38	101%
Stone, clay and glass products (32)	22	85%	3	12%	1	4%	-		26	101%
Primary metal industries (33)	11	61%	3	17%	4	22%	-		18	100%
Fabricated metal products (34)	68	86%	7	9%	3	4%	1	1%	79	100%
Machinery, except electrical (35)	60	81%	6	8%	6	8%	2	3%	74	100%
Electric and electronic equipment (36)	31	78%	3	8%	3	8%	3	8%	40	102%
Transportation equipment (37)	3	33%	3	33%	-		3	33%	9	99%
Instruments and related products (38)	28	82%	2	6%	2	6%	2	6%	34	100%
Miscellaneous manufacturing industries (39)	67	89%	6	8%	1	1%	1	1%	75	99%
TOTAL	941	81%	123	11%	59	5%	36	3%	1,159	100%

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Changes in the Number of Manufacturing Jobs in Sections of Boston, 1965 to 1977

A comprehensive data base which has been used in location of economic activity studies is the Dun and Bradstreet DUNS Market Identifier (DMI) file. The computerized file is a list of Dun and Bradstreet rated firms and contains the same kinds of information as are contained in the BMU.[1] Firms can be grouped by their zip and SIC codes. A study which charted the distribution of manufacturing jobs, total and in selected industries, for sections of Boston using DMI files is Struyk and James' Intrametropolitan Industrial Location. Their findings are for the years 1965 and 1968 and provide an interesting basis for comparision with the 1977 BMU findings, though the findings are not exactly comparable because different methods were used in preparing each file. However, it is the only known source for historical comparison.

Struyk and James aggregated their Boston data into seven zones, shown on Map III, according to zip codes (a description of their analysis zones is contained in Appendix C). After aggregating the BMU information in a similar fashion, it is possible to compare the changes in the number of manufacturing jobs in sections of Boston for 1965 to 1968, and 1968 to 1977. The results are presented in Table 22.[2]

1. A description of the Dun and Bradstreet data is contained in Struyk and James, Intrametropolitan Industrial Location, 1975.

2. Struyk and James assigned zip code 02116 to two different zones. We have been unable to learn from the authors in which zone it belongs, therefore it was assigned to the zone where logically it seemed to belong. See Appendix C for a description of the analysis zones.

Map III

Major Analysis Zones in Boston, As Used by Struyk and James

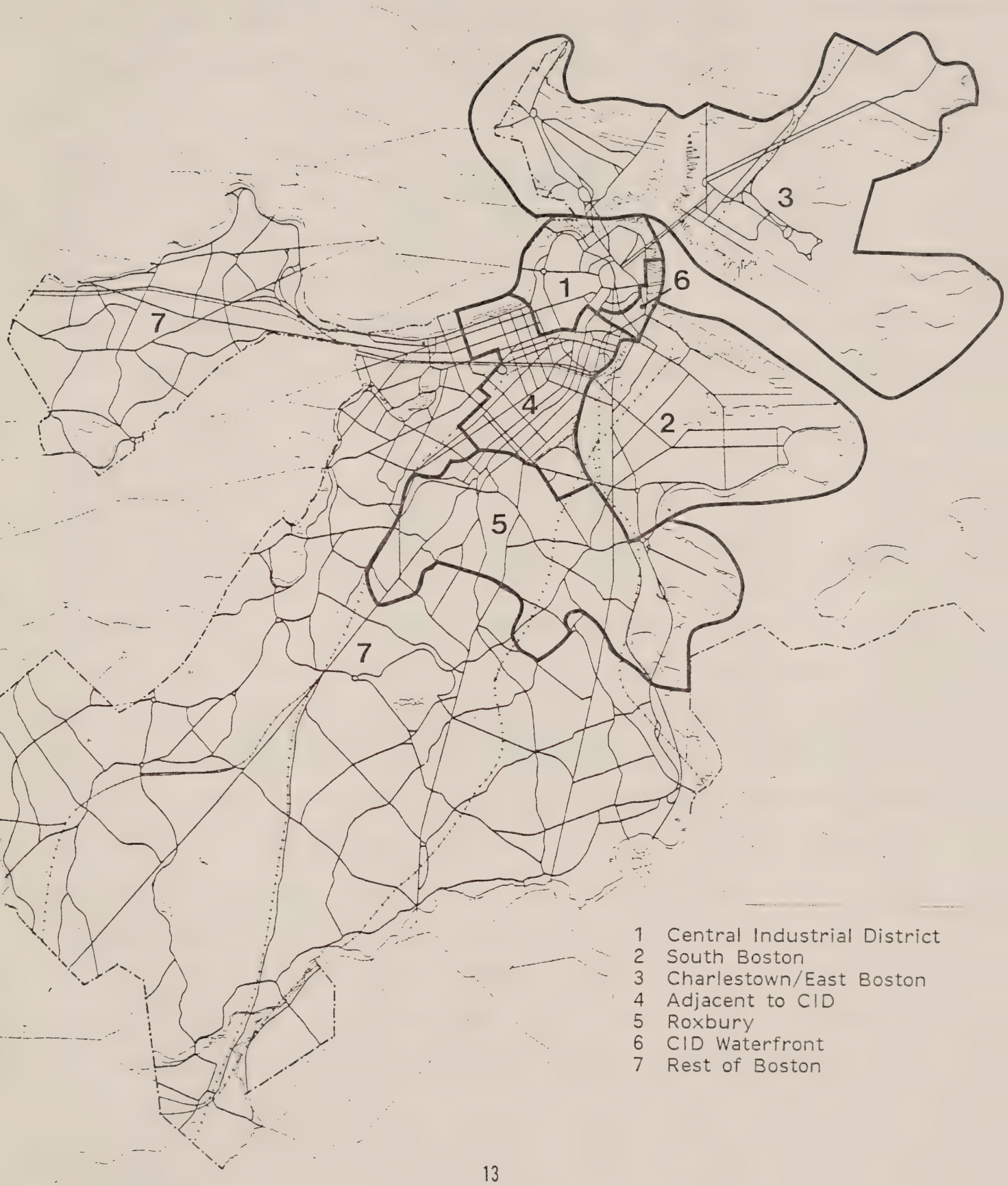

TABLE 22

Change in Numbers of Manufacturing Jobs in Sections of Boston, 1965-1977

Section	Number of Jobs			Percent Change in Number of Jobs	
	1965[a]	1968[a]	1977[b]	1965-1968	1968-1977
Central Industrial District (CID)	13,634	7,724	3,808	(-43%)	(-51%)
South Boston	13,452	18,434	11,144	+37%	(-40%)
Charlestown and East Boston	15,742	16,703	5,576	+ 6%	(-67%)
Adjacent to CID	17,175	15,739	10,782	(- 8%)	(-32%)
CID Waterfront	5,109	5,141	2,387	+ 1%	(-54%)
Roxbury	8,869	7,012	5,853	(-21%)	(-17%)
Rest of Boston	18,620	18,883	13,477	+ 1%	(-29%)
Total	92,601	89,636	53,027	(- 3%)	(-41%)

a Source: Struyk and James, Intrametropolitan Industrial Location, from Dun and Bradstreet data.

b Source: Boston Manufacturing Universe/1977.

For the City as a whole, the number of manufacturing jobs declined slightly between 1965 and 1968 (minus three percent) and dropped over 40 percent between 1968 and 1977. However, between 1965 and 1968, four areas gained manufacturing jobs while three lost. Between 1968 and 1977, although all areas lost jobs, the proportion of loss varied considerably by area. South Boston gained the most jobs between 1965 and 1968, with an addition of roughly 5,000 jobs to its 1965 base of 13,500 jobs. In 1977, the number of jobs in South Boston declined by 7,300, or 40 percent of the 1968 amount. The number of manufacturing jobs in the Central Industrial District (CID), which roughly corresponds to Boston's central business district, declined precipitously during both periods, but the zone also underwent considerable redevelopment and presumably many firms were displaced. The CID Waterfront zone -- also the site of much transformation of land uses during this decade -- had about half the number of manufacturing jobs in 1977 as it did in 1968.

With two exceptions, the ranks of the various zones, based on the number of manufacturing jobs found within them, changed order between 1965 and 1977. The "Rest of Boston" zone, which includes all areas of the City not otherwise included in a zone and is the largest in land area, had the greatest number of jobs in each of the three years; and the CID Waterfront, the smallest area, had the least. Charlestown/ East Boston, with close to 16,000 jobs in 1965, lost two-thirds of its employment base by 1977, to become a less important manufacturing area than South Boston or even Roxbury (though the number of jobs in the latter declined during both periods). The most dramatic drop in manufacturing jobs occurred in the CID, which by 1977 had become relatively unimportant as a manufacturing area.

We can also compare the industrial structure in these areas for 1965 and 1977 to see how changes in selected industries account for the changes in the level of employment in each area. The Struyk and James study provides detailed information on the number of jobs in seven Boston industries: food products, apparel, printing and publishing (the city's three main industries, leather, fabricated metals, non-electrical machinery, and electrical machinery. Altogether, the jobs in these industries accounted for over 80 percent of manufacturing employment in Boston in 1965. Much of the decline in employment in the analysis zones between 1965 and 1977, consequently, is due to the decline in these industries.[1] During this period, the total manufacturing job loss in Boston was 40,000; the loss in the seven industries was 38,000 jobs. The relative delcline in the number of jobs in these industries for each analysis zone is presented in Table 23.

The comparison reveals that certain industries fared better in certain zones than did others. One particularly interesting contrast is between South Boston and Charlestown/East Boston, both of which contained important waterfront industrial areas. In 1965, a large proportion of the jobs in South Boston were in the printing and fabricated metals industries. The printing industry was relatively stable in Boston over the period and though the number of jobs declined by a larger percentage here than in the City as a whole, it remained a major industry in the zone. The number of jobs in the fabricated metals industry--which

1. A crucial assumption in this comparison is that individual firms have the same two-digit SIC classification in the BMU and DMI files. Because firms may have more than one product, and because judgement is required in some cases in assigning code numbers, the main codes assigned to each could differ and consequently would appear as employment change.

Table 21

CHANGE IN EMPLOYMENT IN SECTIONS OF BOSTON IN SEVEN MANUFACTURING INDUSTRIES, 1965 TO 1977

	CBD			South Boston			Charlestown & East Boston			Adjacent to CBD			CBD Waterfront			Roxbury			Rest of Boston			Total		
	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change	1965[a]	1977[b]	Change
1. Food Products	1,565	579	(-63%)	524	991	+89%	6,400	2,905	(-51%)	2,210	725	(-67%)	406	61	(-87%)	1,232	770	(-38%)	2,120	1,130	(-47%)	14,545	7,250	(50%)
2. Apparel	2,417	1,020	(-58%)	797	801	-	724	911	+26%	7,119	1,705	(-47%)	1,011	272	(-73%)	1,310	607	(-54%)	1,776	754	(80%)	17,162	8,150	(-53%)
3. Printing and Publishing	2,424	1,451	(-40%)	3,162	2,592	(-18%)	40	102	+155%	2,454	2,633	+12%	1,061	345	(-82%)	2,367	2,971	+26%	1,645	2,111	+30%	13,855	12,227	(12%)
4. Leather	11	0	-	315	320	-	20	10	-	3,112	1,010	(-68%)	304	0	(-100%)	190	71	(-64%)	346	112	(-68%)	4,406	1,519	(-65%)
5. Fabricated Metals	1,427	61	(-96%)	1,246	3,408	+5%	6,236	161	(-97%)	151	15	(-90%)	54	55	-	1,170	406	(-65%)	1,301	791	(-39%)	11,585	4,899	(-64%)
6. Machinery	3,966	30	(-99%)	1,749	310	(-82%)	161	72	(-55%)	175	389	+122%	71	37	(-49%)	771	170	(-37%)	1,737	1,900	+15%	8,112	1,004	(-61%)
7. Electrical Machinery	69	3	(-96%)	930	755	(-20%)	749	0	(-100%)	74	29	(-61%)	74	0	(-100%)	650	55	(-92%)	2,710	1,222	(-55%)	5,200	2,064	(-61%)
SMA 1-7	11,879	3,154	(-73%)	10,751	9,193	(-15%)	14,330	4,249	(-70%)	15,195	8,506	(-44%)	1,945	770	(-81%)	7,214	5,050	(-30%)	11,651	8,119	(-40%)	76,965	39,141	(-49%)
All Jobs in Zone	11,634	3,808	(-72%)	13,452	11,144	(-17%)	15,742	5,576	(-65%)	17,175	10,702	(-37%)	5,109	2,307	(-53%)	8,869	5,053	(-34%)	10,620	13,477	(-20%)	92,601	51,027	(45%)

Sources: [a] Struyk and James, Intrametropolitan Industrial Location, Tables 4-1,4-2, and 4-4. From Dun and Bradstreet data. Numbers are approximates. Used with permission of the publisher (Lexington, MA:Lexington Books, D.C. Heath and Co. ©1975, D.C. Heath and Co.)

[b] Boston Manufacturing Universe/1977, BRA Research Department

dropped an average of two-thirds in the City--actually increased modestly in South Boston. In Charlestown/East Boston, fabricated metals and food products were the largest industries in 1965. In 1977, of the 6,200 jobs in the fabricated metals industry in 1965, only about 200 remained. A large part of the decline is probably due to the closing of the Boston Naval Shipyard in mid-1974. Jobs in the food products industry dropped by half, which was the average rate of decrease for this industry in the City. By 1977, Charlestown/East Boston had lost two-thirds of its 1965 job base while South Boston--with jobs in a stable industry and gaining jobs despite the downward employment trend in another industry--emerged as the City's second major industrial zone.

The leather industry was concentrated in the Adjacent to CID zone in 1965; the zone lost two-thirds of the jobs in this industry by 1977. Jobs in the apparel industry, also concentrated here, declined by 47% or slightly less than the 53% overall decrease for the City.

The CID zone experienced above average job losses in all industries. The most significant decline was in non-electrical machinery -- an industry which in 1965 was concentrated in this zone. By 1977, there were no machinery firms left in the CID.

The loss of manufacturing jobs in the CID Waterfront zone in the seven industries exceeded the average loss for the City as a whole. The reduction of jobs in the printing industry is especially significant; greater stability might have been expected, for an industry requiring proximity to clients, in this peripheral downtown zone.

Between 1965 and 1977, Roxbury gained printing jobs. Printing in 1977 was the largest industry in the zone which encompasses the Globe plant. During the same period, Roxbury lost jobs in other industries

at an average or lower rate, except for electrical machinery. Consequently, Roxbury experienced a lower than average rate of decrease in all jobs during the period.

- Conclusion

Within the boundaries of Boston, the concentration of manufacturing activity in traditional industrial areas - the central business and port areas - was reduced between 1965 and 1977. Downtown Boston (the CID and Adjacent to the CID zones) was, except for Roxbury, the only section of the city to lose industrial jobs between 1965 and 1968. While all areas experienced job losses between 1968 and 1977, the outer regions (the Rest of Boston zone) were relatively stable in net employment totals.

Table 2

Distribution of Manufacturing Firms and Jobs in Boston, Massachusetts Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# of Boston Firms	% of Boston Firms in Industry Group	# of Boston Jobs	% of Boston Jobs in Industry Group
Food and kindred products (20)	76	7%	7,250	14%
Textile mill products (22)	37	3%	752	1%
Apparel and other textile products (23)	207	18%	8,158	15%
Lumber and wood products (24)	16	1%	487	1%
Furniture and fixtures (25)	45	4%	1,060	2%
Paper and allied products (26)	33	3%	1,056	2%
Printing and publishing (27)	284	25%	12,227	23%
Chemicals and allied products (28)	43	4%	3,630	7%
Petroleum and coal products (29)	2	*	13	*
Rubber and misc. plastic products (30)	23	2%	729	1%
Leather products (31)	38	3%	1,539	3%
Stone, clay and glass products (32)	26	2%	607	1%
Primary metal industries (33)	18	2%	1,135	2%
Fabricated metal products (34)	79	7%	4,899	9%
Machinery, except electrical (35)	74	6%	3,004	6%
Electric and electronic equipment (36)	40	3%	2,064	4%
Transportation equipment (37)	9	1%	1,175	2%
Instruments and related products (38)	34	3%	1,775	3%
Miscellaneous manufacturing industries (39)	75	6%	1,467	3%
TOTAL	1,159	100%	53,027	99% **

* Less than one percent

** Subject to rounding

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 3

Distribution of Manufacturing Firms and Jobs in Allston/Brighton (Zip Codes 02134 and 02135) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	11	14%	867	12%
Textile mill products (22)	2	5%	18	2%
Apparel and other textile products (23)	8	4%	208	3%
Lumber and wood products (24)	2	13%	23	5%
Furniture and fixtures (25)	-	-	-	-
Paper and allied products (26)	4	12%	41	4%
Printing and publishing (27)	5	2%	48	*
Chemicals and allied products (28)	7	16%	176	5%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	2	11%	85	7%
Fabricated metal products (34)	12	15%	268	5%
Machinery, except electrical (35)	5	7%	144	5%
Electric and electronic equipment (36)	6	15%	464	22%
Transportation equipment (37)	2	22%	42	4%
Instruments and related products (38)	4	12%	304	17%
Miscellaneous manufacturing industries (39)	2	3%	35	2%
TOTAL	72		2,723	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 4

Distribution of Manufacturing Firms and Jobs in Back Bay/Beacon Hill (Zip Codes 02108, 02116 and 02199) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	1	1%	6	*
Textile mill products (22)	1	3%	28	4%
Apparel and other textile products (23)	8	4%	52	1%
Lumber and wood products (24)	2	13%	59	12%
Furniture and fixtures (25)	2	4%	5	*
Paper and allied products (26)	1	3%	-	-
Printing and publishing (27)	50	18%	1,833	15%
Chemicals and allied products (28)	6	14%	1,520	42%
Petroleum and coal products (29)	1	50%	1	8%
Rubber and misc. plastic products (30)	2	9%	11	2%
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	4	15%	96	16%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	2	3%	6	*
Machinery, except electrical (35)	5	7%	53	2%
Electric and electronic equipment (36)	2	5%	23	1%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	8	24%	47	3%
Miscellaneous manufacturing industries (39)	22	29%	192	13%
TOTAL	117		3,932	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 5

Distribution of Manufacturing Firms and Jobs in Central Boston
(Zip Codes 02109, 02110, 02111, 02113 and 02114) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	13	17%	649	9%
Textile mill products (22)	16	43%	381	51%
Apparel and other textile products (23)	114	55%	4,137	51%
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	11	24%	165	16%
Paper and allied products (26)	8	24%	290	27%
Printing and publishing (27)	75	26%	1,210	10%
Chemicals and allied products (28)	7	16%	980	27%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	5	22%	55	8%
Leather products (31)	15	39%	287	19%
Stone, clay and glass products (32)	4	15%	115	19%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	6	8%	121	2%
Machinery, except electrical (35)	7	9%	58	2%
Electric and electronic equipment (36)	1	3%	3	*
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	3	9%	814	46%
Miscellaneous manufacturing industries (39)	16	21%	219	15%
TOTAL	301		9,484	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 6

Distribution of Manufacturing Firms and Jobs in Charlestown (Zip Code 02129) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	5	7%	2,824	39%
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	3	1%	190	2%
Lumber and wood products (24)	1	6%	3	1%
Furniture and fixtures (25)	-	-	-	-
Paper and allied products (26)	2	6%	70	7%
Printing and publishing (27)	1	*	65	1%
Chemicals and allied products (28)	4	9%	49	1%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	1	4%	55	8%
Leather products (31)	1	3%	18	1%
Stone, clay and glass products (32)	2	8%	140	23%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	1	1%	8	*
Machinery, except electrical (35)	2	3%	44	1%
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	-	-	-	-
Miscellaneous manufacturing industries (39)	1	1%	9	1%
TOTAL	24		3,475	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 7

Distribution of Manufacturing Firms and Jobs in Dorchester (Fields Corner) (Zip Codes 02122 and 02124) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	5	7%	120	2%
Textile mill products (22)	1	3%	40	5%
Apparel and other textile products (23)	5	2%	124	2%
Lumber and wood products (24)	1	6%	4	1%
Furniture and fixtures (25)	-	-	-	-
Paper and allied products (26)	2	6%	16	2%
Printing and publishing (27)	7	2%	52	*
Chemicals and allied products (28)	2	5%	21	1%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	3	13%	97	13%
Leather products (31)	1	3%	25	2%
Stone, clay and glass products (32)	4	15%	53	9%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	9	11%	184	4%
Machinery, except electrical (35)	11	15%	294	10%
Electric and electronic equipment (36)	3	8%	405	20%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	-	-	-	-
Miscellaneous manufacturing industries (39)	5	7%	144	10%
TOTAL	59		1,579	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 8

Distribution of Manufacturing Firms and Jobs in Dorchester (Uphams Corner) (Zip Code 02125) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	4	5%	745	10%
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	3	1%	250	3%
Lumber and wood products (24)	1	6%	15	3%
Furniture and fixtures (25)	1	2%	65	6%
Paper and allied products (26)	1	3%	10	1%
Printing and publishing (27)	2	*	2,922	24%
Chemicals and allied products (28)	-	-	-	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	4	22%	305	27%
Fabricated metal products (34)	6	8%	306	6%
Machinery, except electrical (35)	5	7%	140	5%
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	-	-	-	-
Miscellaneous manufacturing industries (39)	-	-	-	-
TOTAL	27		4,756	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 9

Distribution of Manufacturing Firms and Jobs in East Boston (Zip Code 02128) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	4	5%	161	2%
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	9	4%	721	9%
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	2	4%	89	8%
Paper and allied products (26)	-	-	-	-
Printing and publishing (27)	5	2%	37	*
Chemicals and allied products (28)	-	-	-	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	1	4%	13	2%
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	1	6%	28	2%
Fabricated metal products (34)	5	6%	153	3%
Machinery, except electrical (35)	4	5%	28	1%
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	3	33%	523	45%
Instruments and related products (38)	-	-	-	-
Miscellaneous manufacturing industries (39)	3	4%	348	24%
TOTAL	37		2,101	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 10

Distribution of Manufacturing Firms and Jobs in Fenway/Kenmore (Zip Codes 02115 and 02215) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	-	-	-	-
Textile mill products (22)	1	3%	-	-
Apparel and other textile products (23)	2	1%	295	4%
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	1	2%	25	2%
Paper and allied products (26)	1	3%	15	1%
Printing and publishing (27)	23	8%	1,542	13%
Chemicals and allied products (28)	-	-	-	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	2	9%	95	13%
Leather products (31)	1	3%	50	3%
Stone, clay and glass products (32)	4	15%	71	12%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	1	1%	15	*
Machinery, except electrical (35)	3	4%	229	8%
Electric and electronic equipment (36)	5	13%	63	3%
Transportation equipment (37)	1	11%	54	5%
Instruments and related products (38)	7	21%	111	6%
Miscellaneous manufacturing industries (39)	3	4%	60	4%
TOTAL	55		2,625	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 11

Distribution of Manufacturing Firms and Jobs in Hyde Park (Zip Codes 02136 and 02137) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	-	-	-	-
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	2	1%	55	1%
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	3	7%	49	5%
Paper and allied products (26)	4	12%	402	38%
Printing and publishing (27)	4	1%	208	2%
Chemicals and allied products (28)	3	7%	17	-
Petroleum and coal products (29)	1	50%	12	92%
Rubber and misc. plastic products (30)	1	4%	210	29%
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	5	28%	485	43%
Fabricated metal products (34)	5	6%	247	5%
Machinery, except electrical (35)	7	9%	765	25%
Electric and electronic equipment (36)	2	5%	75	4%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	1	3%	12	1%
Miscellaneous manufacturing industries (39)	1	1%	9	1%
TOTAL	39		2,546	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 12

Distribution of Manufacturing Firms and Jobs in Mattapan/Franklin Field (Zip Code 02126) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	1	1%	15	*
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	-	-	-	-
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	1	2%	2	*
Paper and allied products (26)	-	-	-	-
Printing and publishing (27)	1	*	-	-
Chemicals and allied products (28)	-	-	-	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	-	-	-	-
Machinery, except electrical (35)	-	-	-	-
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	1	3%	150	8%
Miscellaneous manufacturing industries (39)	-	-	-	-
TOTAL	4		167	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 13

Distribution of Manufacturing Firms and Jobs in Jamaica Plain (Zip Code 02130) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	2	3%	35	-
Textile mill products (22)	2	5%	24	3%
Apparel and other textile products (23)	3	1%	49	1%
Lumber and wood products (24)	1	6%	25	5%
Furniture and fixtures (25)	4	9%	40	4%
Paper and allied products (26)	1	3%	21	2%
Printing and publishing (27)	7	2%	223	2%
Chemicals and allied products (28)	1	2%	8	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	2	5%	37	2%
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	2	11%	160	14%
Fabricated metal products (34)	2	3%	19	-
Machinery, except electrical (35)	5	7%	291	10%
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	2	6%	19	1%
Miscellaneous manufacturing industries (39)	3	4%	14	1%
TOTAL	37		965	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 14

Distribution of Manufacturing Firms and Jobs in Roslindale (Zip Code 02131) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	1	1%	7	*
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	-	-	-	-
Lumber and wood products (24)	2	13%	43	9%
Furniture and fixtures (25)	-	-	-	-
Paper and allied products (26)	-	-	-	-
Printing and publishing (27)	1	*	24	*
Chemicals and allied products (28)	-	-	-	-
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	1	4%	35	6%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	1	1%	3	*
Machinery, except electrical (35)	1	1%	35	1%
Electric and electronic equipment (36)	-	-	-	-
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	3	9%	189	11%
Miscellaneous manufacturing industries (39)	-	-	-	-
TOTAL	10		336	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 15

Distribution of Manufacturing Firms and Jobs in Roxbury
(Zip Codes 02119, 02120 and 02121) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	3	4%	120	2%
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	6	3%	357	4%
Lumber and wood products (24)	-	-	-	-
Furniture and fixtures (25)	9	20%	251	24%
Paper and allied products (26)	2	6%	82	8%
Printing and publishing (27)	4	1%	65	1%
Chemicals and allied products (28)	4	9%	51	1%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	4	11%	71	5%
Stone, clay and glass products (32)	2	8%	10	2%
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	8	10%	155	3%
Machinery, except electrical (35)	3	4%	30	1%
Electric and electronic equipment (36)	6	15%	225	11%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	2	6%	92	5%
Miscellaneous manufacturing industries (39)	2	3%	75	5%
TOTAL	55		1,584	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 16

Distribution of Manufacturing Firms and Jobs in South Boston (Zip Codes 02127 and 02210) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	19	25%	991	14%
Textile mill products (22)	12	32%	205	27%
Apparel and other textile products (23)	26	13%	801	10%
Lumber and wood products (24)	3	19%	279	57%
Furniture and fixtures (25)	4	9%	101	10%
Paper and allied products (26)	5	15%	66	6%
Printing and publishing (27)	87	31%	2,592	21%
Chemicals and allied products (28)	6	14%	108	3%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	7	30%	153	21%
Leather products (31)	9	24%	328	21%
Stone, clay and glass products (32)	5	19%	87	14%
Primary metal industries (33)	3	17%	64	7%
Fabricated metal products (34)	19	24%	3,408	70%
Machinery, except electrical (35)	13	18%	318	11%
Electric and electronic equipment (36)	8	20%	755	37%
Transportation equipment (37)	3	33%	556	47%
Instruments and related products (38)	1	3%	4	*
Miscellaneous manufacturing industries (39)	13	17%	328	22%
TOTAL	243		11,144	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 17

Distribution of Manufacturing Firms and Jobs in South End (Zip Code 02118) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	7	9%	710	10%
Textile mill products (22)	2	5%	56	7%
Apparel and other textile products (23)	16	8%	896	11%
Lumber and wood products (24)	2	13%	6	1%
Furniture and fixtures (25)	5	11%	229	22%
Paper and allied products (26)	2	6%	43	4%
Printing and publishing (27)	10	4%	1,402	11%
Chemicals and allied products (28)	2	5%	560	15%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	-	-	-	-
Leather products (31)	5	13%	723	47%
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	1	6%	8	1%
Fabricated metal products (34)	2	3%	6	*
Machinery, except electrical (35)	2	3%	345	11%
Electric and electronic equipment (36)	4	10%	26	1%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	-	-	-	-
Miscellaneous manufacturing industries (39)	4	5%	34	2%
TOTAL	64		5,044	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

Table 18

Distribution of Manufacturing Firms and Jobs in West Roxbury (Zip Code 02132) Among Major Industry Groups, 1977

Major Industry Group (SIC #)	# Firms	% of All Industry Group Firms in Area	# Jobs	% of All Industry Group Jobs in Area
Food and kindred products (20)	-	-	-	-
Textile mill products (22)	-	-	-	-
Apparel and other textile products (23)	2	1%	23	*
Lumber and wood products (24)	1	6%	30	6%
Furniture and fixtures (25)	2	4%	39	4%
Paper and allied products (26)	-	-	-	-
Printing and publishing (27)	2	1%	4	*
Chemicals and allied products (28)	1	2%	140	4%
Petroleum and coal products (29)	-	-	-	-
Rubber and misc. plastic products (30)	1	4%	40	5%
Leather products (31)	-	-	-	-
Stone, clay and glass products (32)	-	-	-	-
Primary metal industries (33)	-	-	-	-
Fabricated metal products (34)	-	-	-	-
Machinery, except electrical (35)	1	1%	230	8%
Electric and electronic equipment (36)	3	8%	25	1%
Transportation equipment (37)	-	-	-	-
Instruments and related products (38)	2	6%	33	2%
Miscellaneous manufacturing industries (39)	-	-	-	-
TOTAL	15		564	

* Less than one percent

Source: Boston Manufacturing Universe/1977/Data File, B.R.A. Research Department

APPENDICIES

APPENDIX A

Methods and Definitions Used to Prepare the Boston Manufacturing Universe/1977

The Boston Manufacturing Universe is a list of all manufacturing enterprises in Boston, prepared for the year 1977. Along with the name of each firm, the file contains information on the firm's main and Boston branch locations (the zip code area in which each is located); number of employees at each location; and the firm's industrial classification, using the codes of the Standard Industrial Classification System.

Compilation and Correction Procedures

Several sources were used initially to compile the list. The principal sources were the 1978 Directory of Massachusetts Manufacturers (DMM)[1] and the 1977 Massachusetts State Industrial Directory (SID).[2] Other sources included the Department of Commerce and Development inventories of Massachusetts firms classified by size of labor force,[3] the 1978

1 1978 Directory of Massachusetts Manufacturers, Boston: George D. Hall, 1978.

2 1977 Massachusetts State Industrial Directory, New York: State Industrial Directories Corp., 1977.

3 "1977, Larger Employers in Massachusetts, A list of the Employers in Massachusetts having 50-99 employees...covered by the Employment Security Law," Massachusetts Department of Commerce and Development, Office of Economic Research and Statistics, 1978. Lists also consulted: 100-249, 250-499, 500-999, and 1,000+ employees.

Boston Telephone Directory, the Boston City Directory,[1] and information learned from City agencies.

Neither of the previously mentioned directories was entirely satisfactory for our purposes, either for completeness of listings or accuracy, and a rather extensive correction effort was required to prepare the BMU file. The first step in preparing the file was to compare the information on Boston firms contained in the SID and the DMM. The directories are essentially similar, in that both list the names of firms alphabetically according to the municipality in which they are located, and provide the other types of information included in the file. However, the SID reportedly prints information only for firms which respond to their current survey, unlike the DMM which reportedly prints information from previous years if more current data is unavailable.[2] Therefore, the SID list was taken as the more reliable source.

Several categories of firms were identified for the purpose of correcting the data. All firms which appeared in both the DMM and SID were put into Category I. Firms in the DMM but not the SID were put in Category II. Firms appearing in the SID but not the DMM were put in Category III.

The information on firms in Category I contained in the SID was treated as accurate. If, however, a firm reportedly employed more than 100 people, or if there was a large discrepancy between the DMM and SID employment figures, the employment information was verified

1 Polk's Boston City Directory, Boston: R.L. Polk & Co, 1976.

2 These reports could not be verified with the publishers.

through a telephone or mail inquiry. All firms in Category I were included in the BMU file, along with updated employment information, where available.[1]

The following checks were made on Category II firms prior to including them in the BMU file: firms with ten or more employees were contacted by phone to verify that they were still in business and to learn the number of employees. Firms with less than ten employees were checked in a 1978 telephone directory to see if they were listed. If they were, it was assumed they were still in business. Telephone contacts were made in February and March of 1978.

All Category III firms were checked for listing in a 1978 telephone directory. Though the SID was presumed to be accurate, we nevertheless found such errors as inclusion of out-of-business firms. Category III firms which were found in the telephone directory were included in the BMU.

A final check was made for completeness of firm listings by using listings compiled for the Massachusetts Department of Commerce and Development by the Massachusetts Division of Employment Security, of firms covered by the Employment Security Law, classified by number of employees. Firms found on those lists which were not listed in the directories were contacted to learn their exact number of employees and included in the BMU file.

Finally, every effort was made to correct errors in information from the directories (such as reporting of wrong zip or SIC codes) and

1 Occasionally, firms would not release figures on the present size of their labor force. In such instances, the published figures were used.

to eliminate double listings. In instances where firms had several names representing various divisions of a firm in one location and it was impossible to divide employment among the divisions, the names were included in the file but the employment figure was assigned to only one of the names of the company.[1]

Firm names and associated information were entered into a computer, using a software package known as the Hierarchic Management System. It allows for updating, so a new file can be developed for future years. Information on labor force size for individual firms obtained from personal contact is treated as confidential.

Definitions of Elements in the BMU

Employment: The number of employees listed for each firm represents the average yearly employment at the address shown in 1977 -- including full-time and part-time employees -- when this information was learned from direct contact with the firm, or the number was reported in the SID or DMM (subject to above mentioned corrections).

SIC Number: The DMM and SID both reported one or more SIC numbers for each firm and the first ones reported in each listing, which presumably represented the main activity of the firm, were compared. Only the first two digits of the SIC were used for analytical purposes, though four digits were entered in the file. In cases where the first two digits of SIC reported in the directories differed, an SIC was assigned that best matched the product description that usually accompanied the listing.

Zip Code: The zip code reported represents the district in the city where the firm is actually found. Consequently, all firms which had post office box zip codes were assigned new codes based on the firm's street address. The one exception was the 02137 Readville business service zip code which, while not a geographic zone, is used for businesses in the Readville section of Hyde Park.

1 There were few instances of multiple names, representing divisions of one firm, so it is unlikely this procedure would have skewed the results in the direction of smaller firm size.

APPENDIX B

Planning District and Zip Code Area Equivalents, Used for the Boston Manufacturing Universe/1977

PLANNING DISTRICT	ZIP CODE
Allston/Brighton	02134, 02135
Back Bay/Beacon Hill	02108, 02116, 02199
Central	02109, 02110, 02111, 02113, 02114
Charlestown	02129
Dorchester (Uphams Corner)	02125
Dorchester (Fields Corner)	02122, 02124
East Boston	02128
Fenway/Kenmore	02115, 02215
Hyde Park	02136, 02137
Jamaica Plain	02130
Mattapan/Franklin Field	02126
Roslindale	02131
Roxbury	02119, 02120, 02121
South Boston	02127, 02210
South End	02118
West Roxbury	02132

APPENDIX C

Description of Analysis Zones Used by Struyk and James

Central Industrial District (CID)	02108, 02109, 02113, 02114[1]
South Boston	02210, 02127
Charlestown/East Boston	02128, 02129
Adjacent to CID	02111, 02118, 02116
Roxbury	02119, 02125
CID Waterfront	02110
Rest of City	All other Zip Codes in Boston

1 In the published table, zip code 02116 appears in both the CID and the Adjacent to CID. We were unable to learn from the authors or publisher in which zone the authors intended 02116 to be included. We included it in the Adjacent to CID zone.

Source: Struyk and James, Intrametropolitan Industrial Location, p. 166.

Appendix D

Comparison of Number of Manufacturing Jobs in Boston, as Reported By the BMU and Other Sources

	BMU[a]	"City of Boston Employment"[b]	Struyk and James[c]	Census of Manufacturers[d]
1977	53,027	54,537	-	Not Available
1968	-	69,954	89,636	47,019
1965	-	76,593	92,601	51,442

Sources:

a Boston Manufacturing Universe/1977

b Dennis Ettlin, "Boston's Employment in 1976 ..." and "Employment and Wages by 2 Digit SIC Codes...", BRA Research Department, 1977.

c R. Struyk and F. James, Intrametropolitan Industrial Location, 1975.

d "Census of Manufacturers - City of Boston, Massachusetts," Mass. Department of Labor and Industries, Executive Office of Manpower Affairs, 1972. Does not include jobs in printing and bakery products firms which have gross sales of under $50,000.

APPENDIX E

Boston Zip Codes

:024 54